

Figure 1



Figure 3

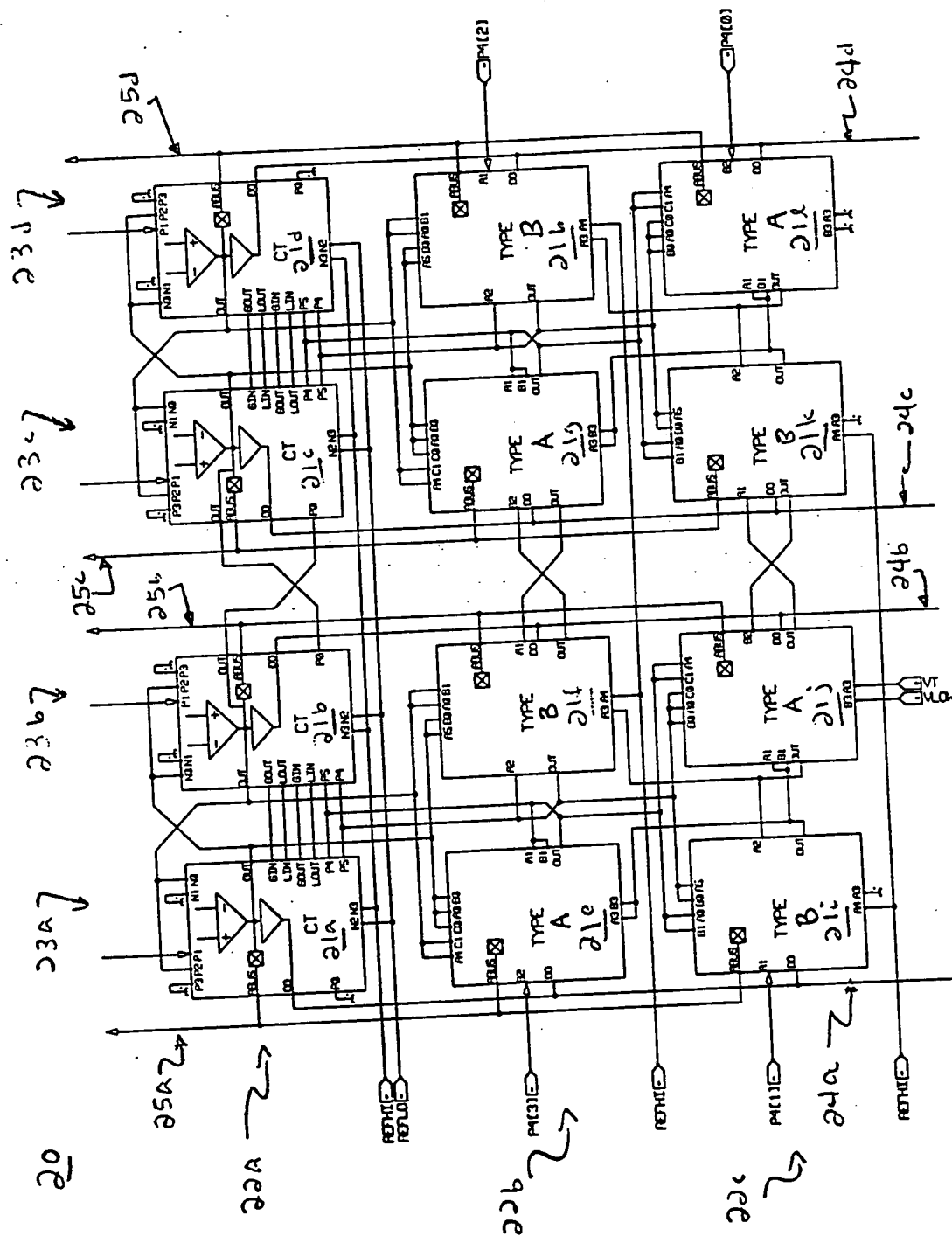


Figure 3

40

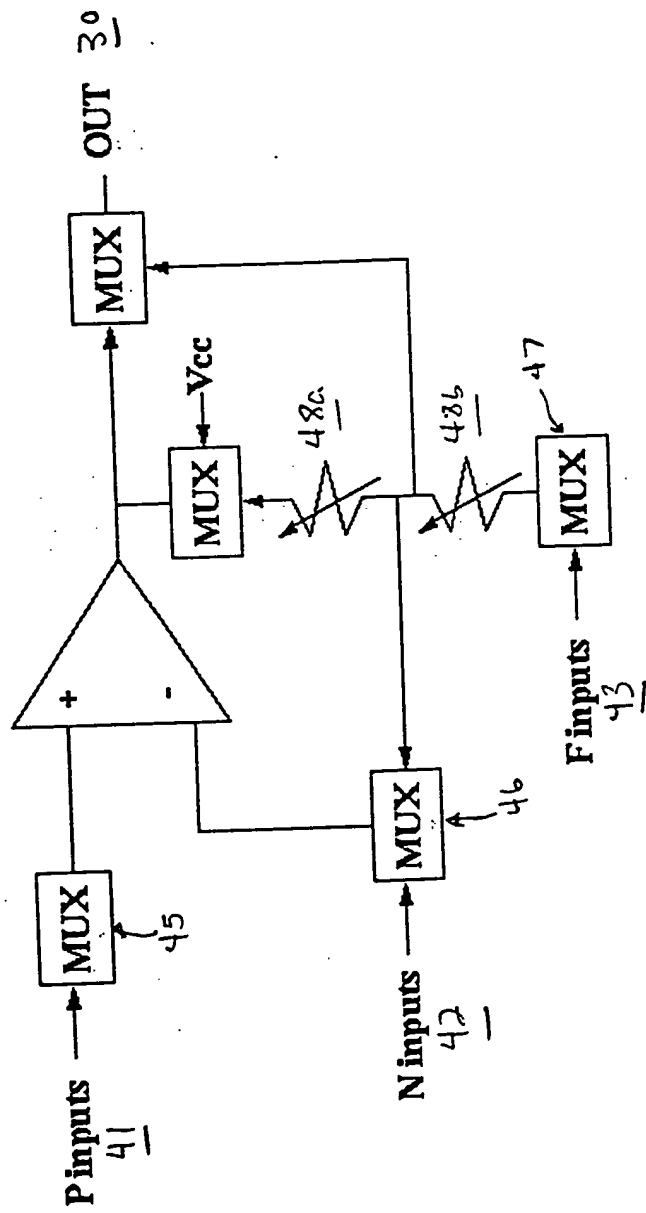


Figure 4A

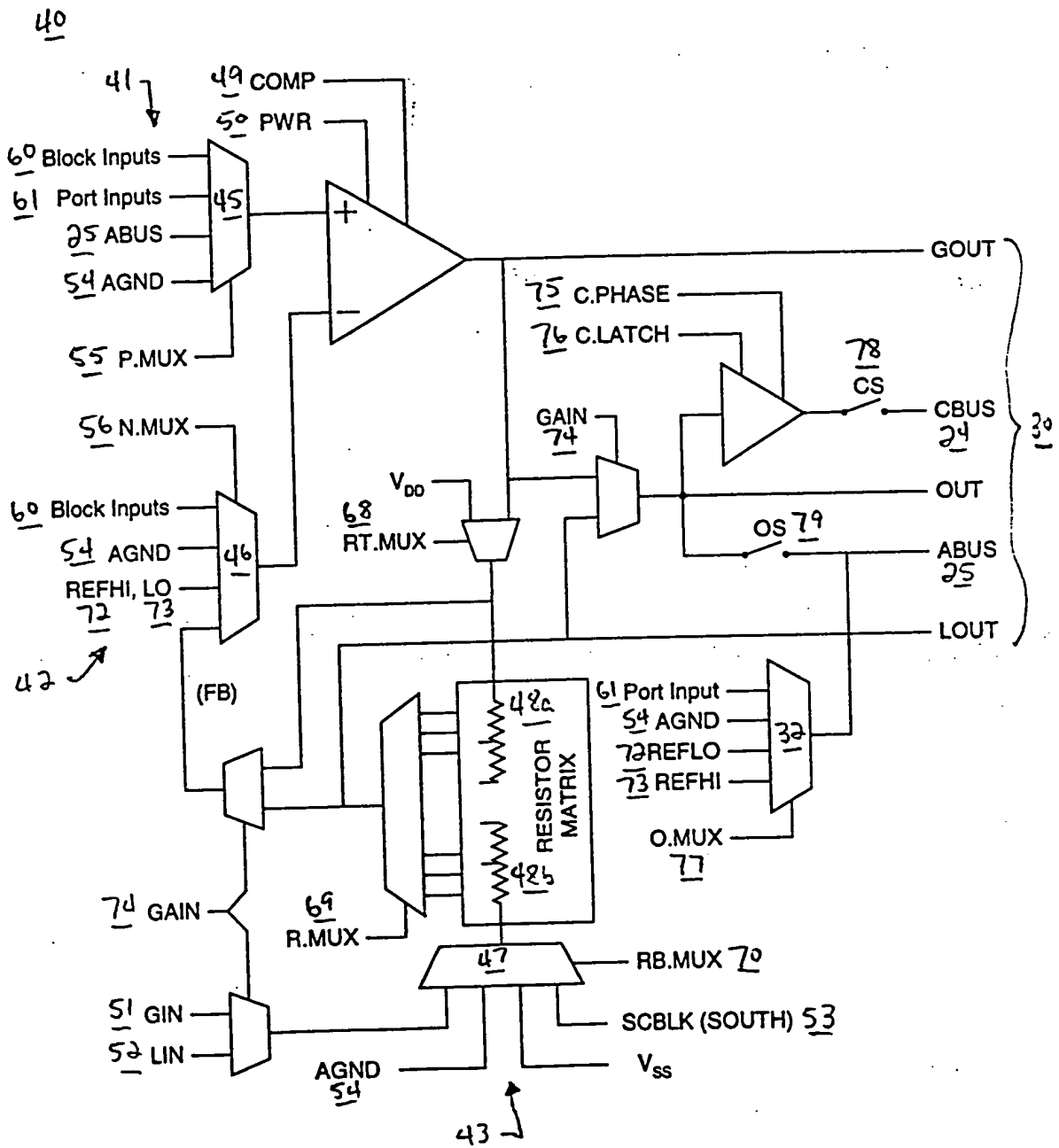


Figure 4B

40

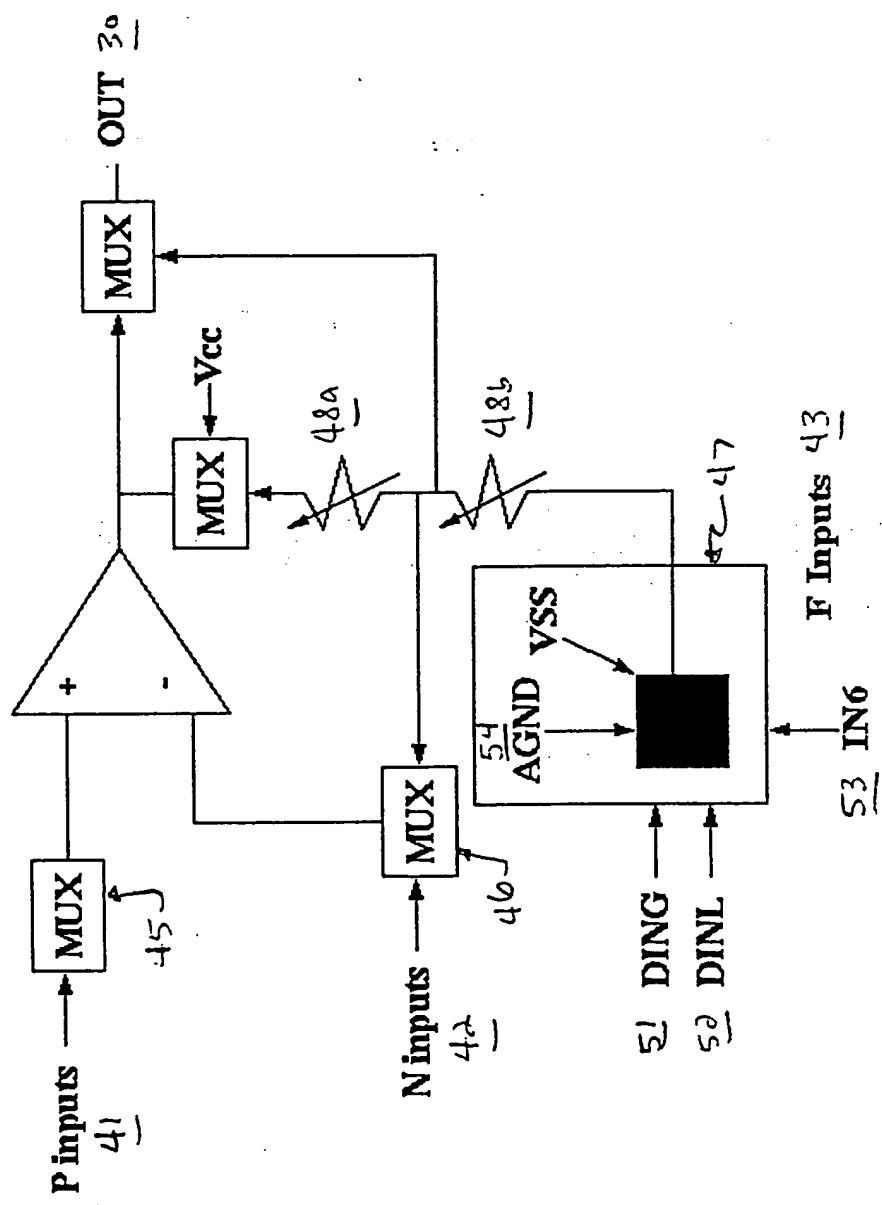


Figure 5

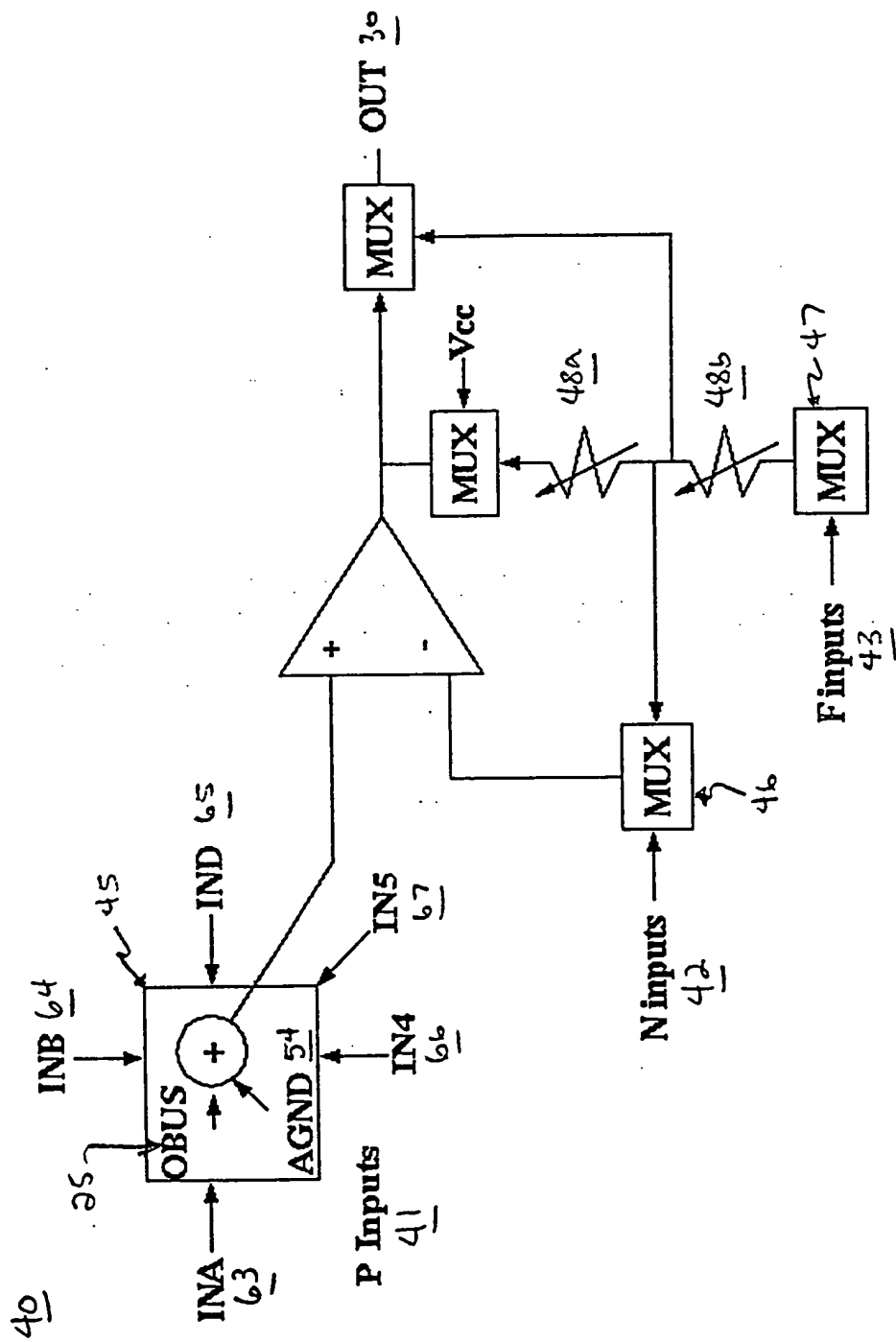
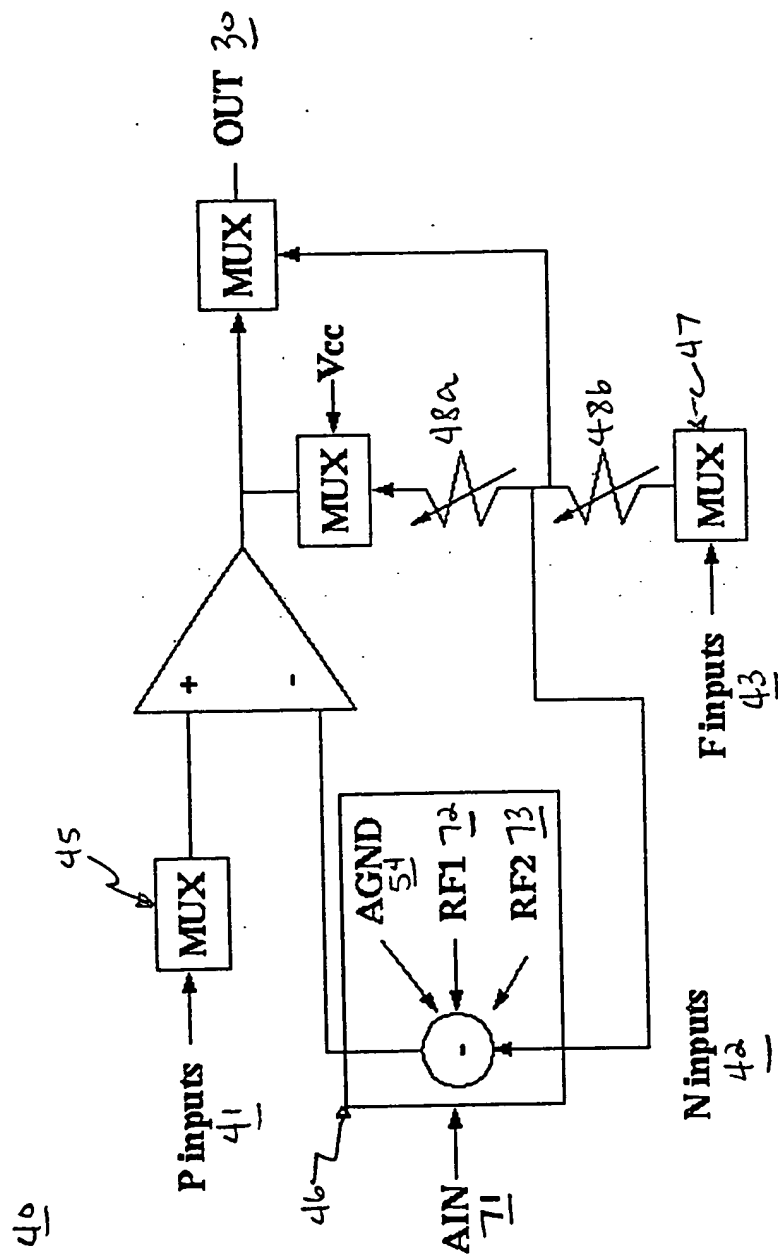


Figure 6



## Figure 7



Figure 8A

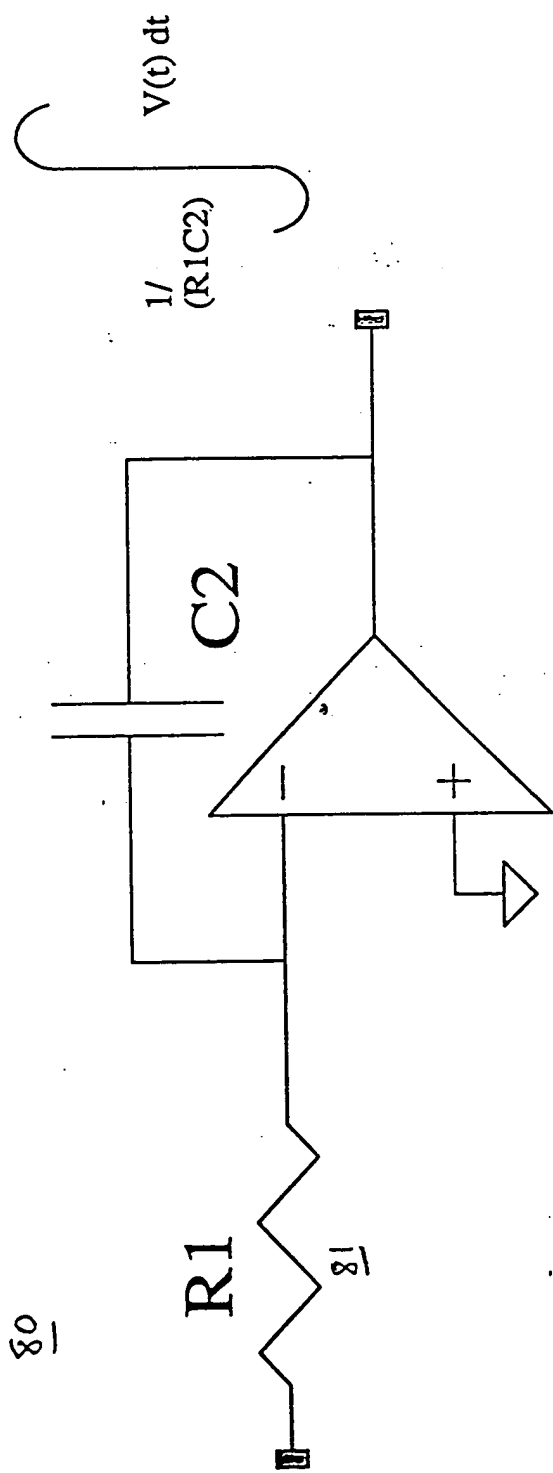


Figure 8A

6 4 7 7 4 6 2 5 4 3 2 3 0 4 4

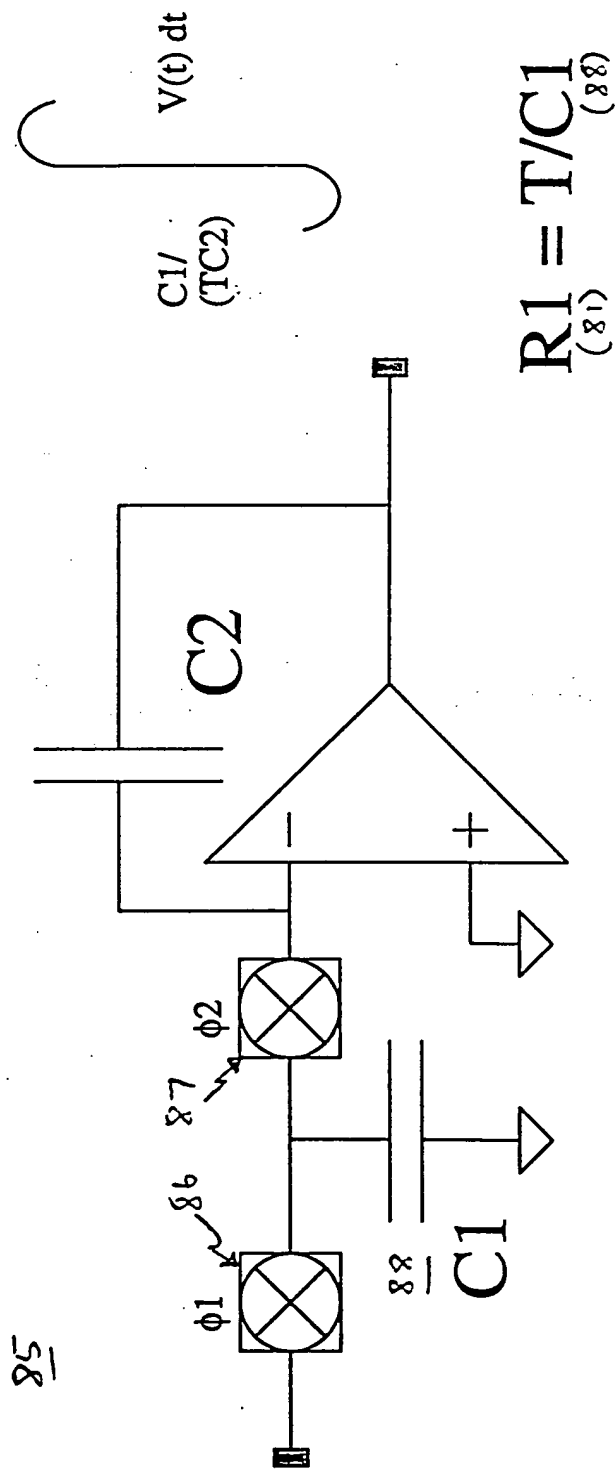
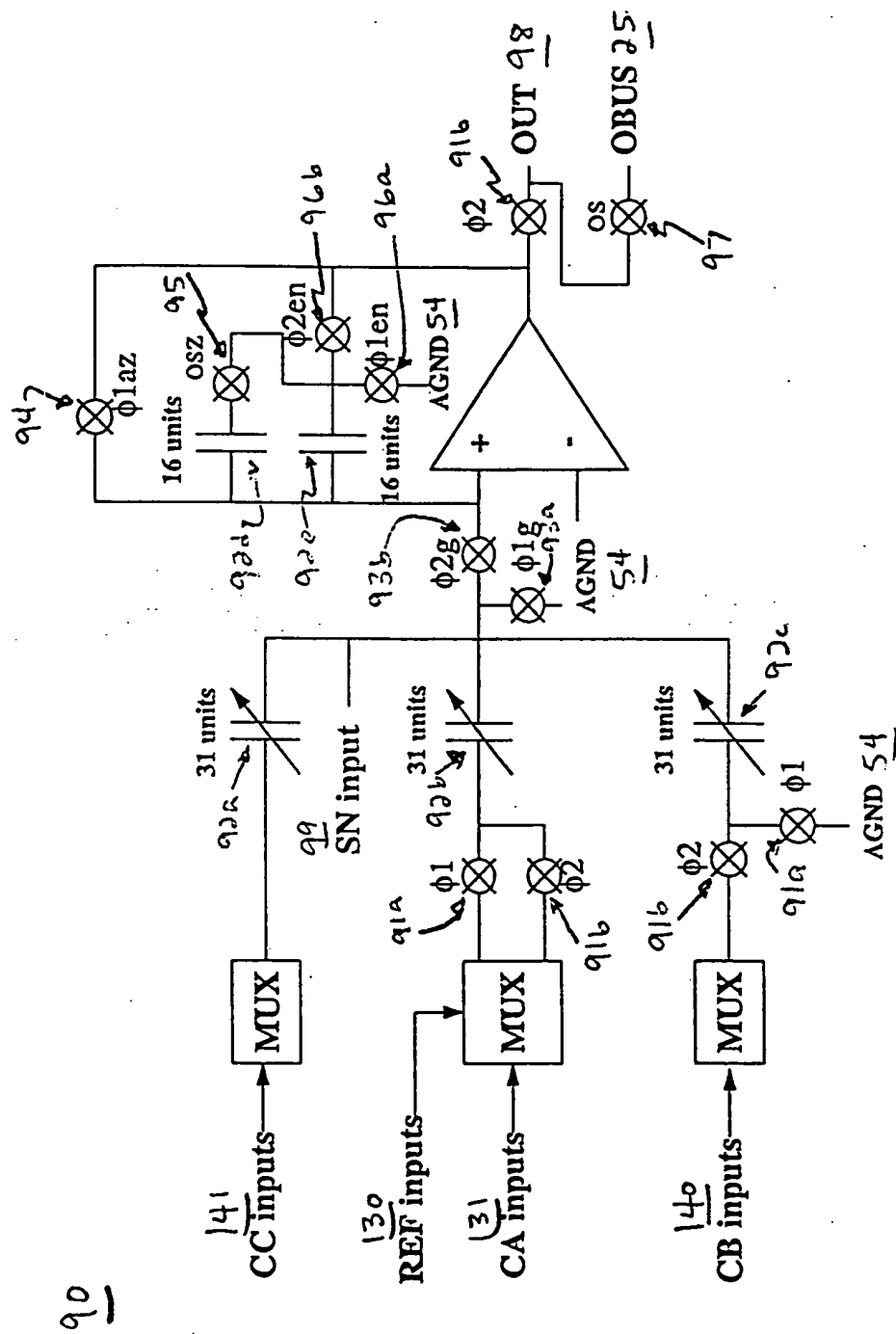


Figure 8B



90a

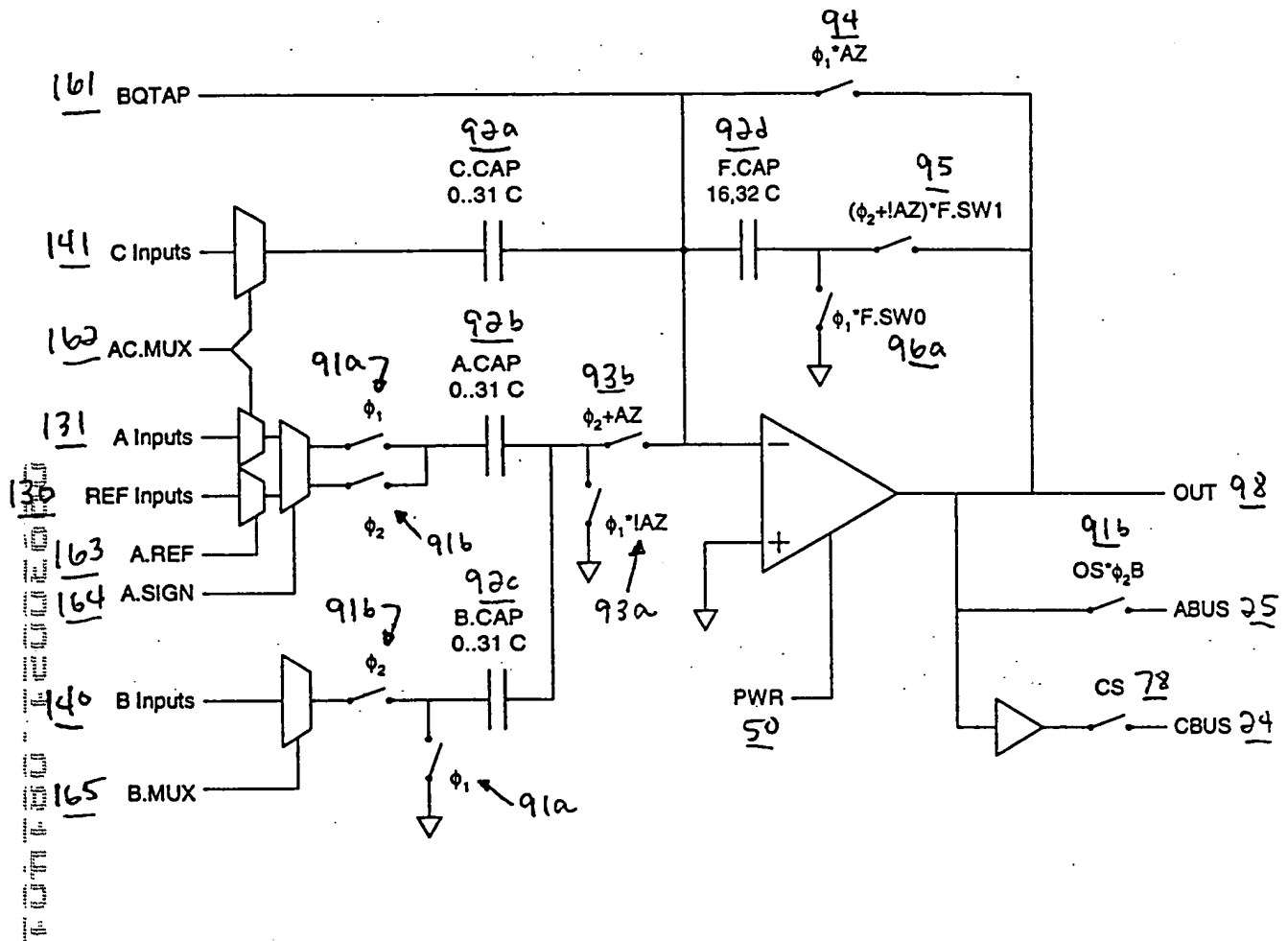


Figure 9B



90

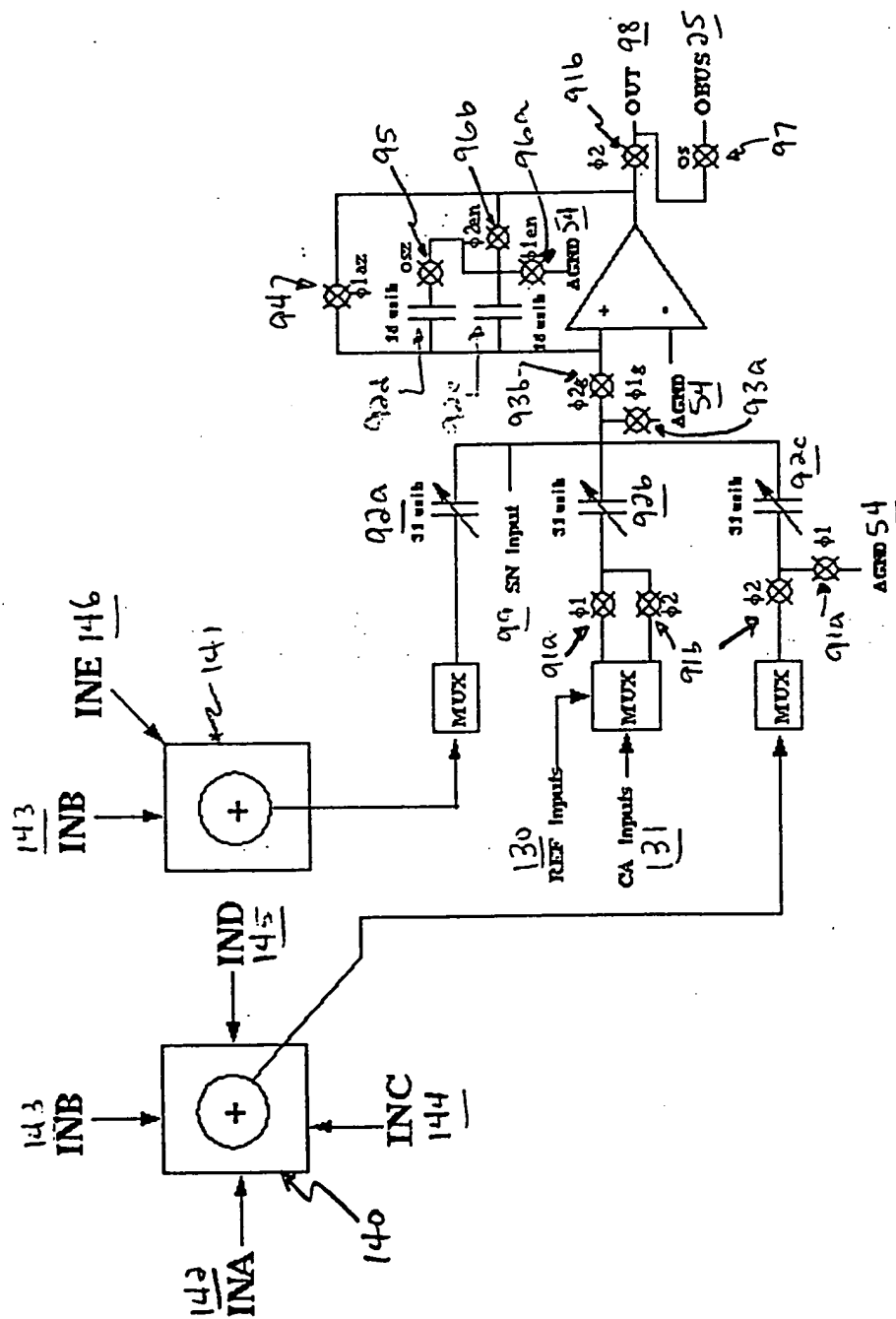


Figure 11

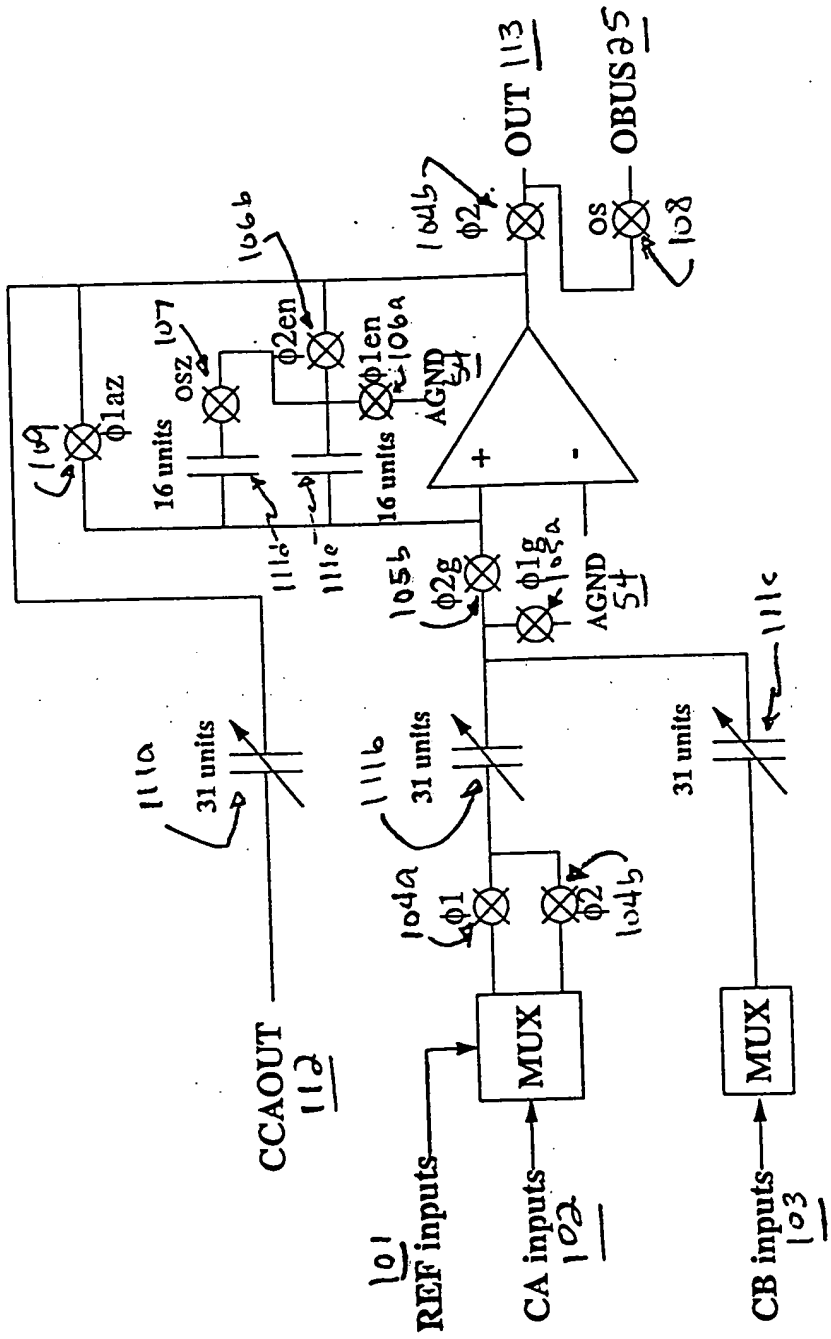


Figure 12A

The schematic diagram illustrates the internal circuitry of the A/D converter. It features two input multiplexers, 166 (A.MUX) and 169 (B.MUX), which select between A Inputs (102), REF Inputs (101), A.REF (167), A.SIGN (168), B Inputs (103), and B.MUX (169). The selected signals are processed through a series of capacitors and switches. The A input path includes capacitors 111b (A.CAP 0.31 C) and 111d (F.CAP 16.32 C), and switches 104a, 105b, 105a, and 107. The B input path includes capacitors 111c (B.CAP 0.31 C) and 111a (C.CAP 0.31 C), and switches 104b, 104a, 104b, and 106a. The circuit is controlled by clock signals  $\phi_1$  and  $\phi_2$ , and a reference voltage  $\phi_1 \cdot \text{AZ}$ . The output of the circuit is OUT 113, which is also connected to ABUS 25 and CBUS 24. The circuit is powered by PWR 50.

### Figure 12B



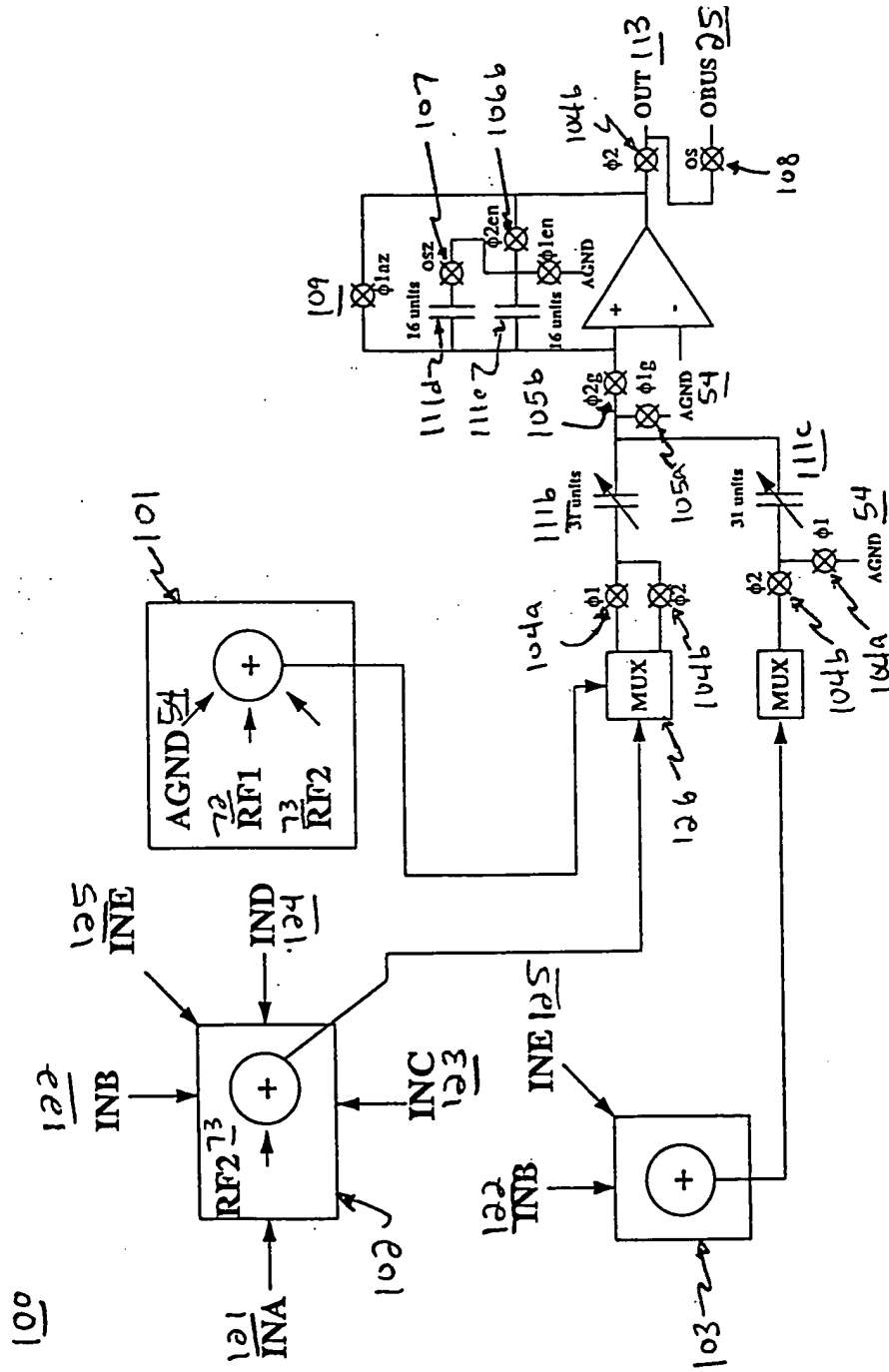
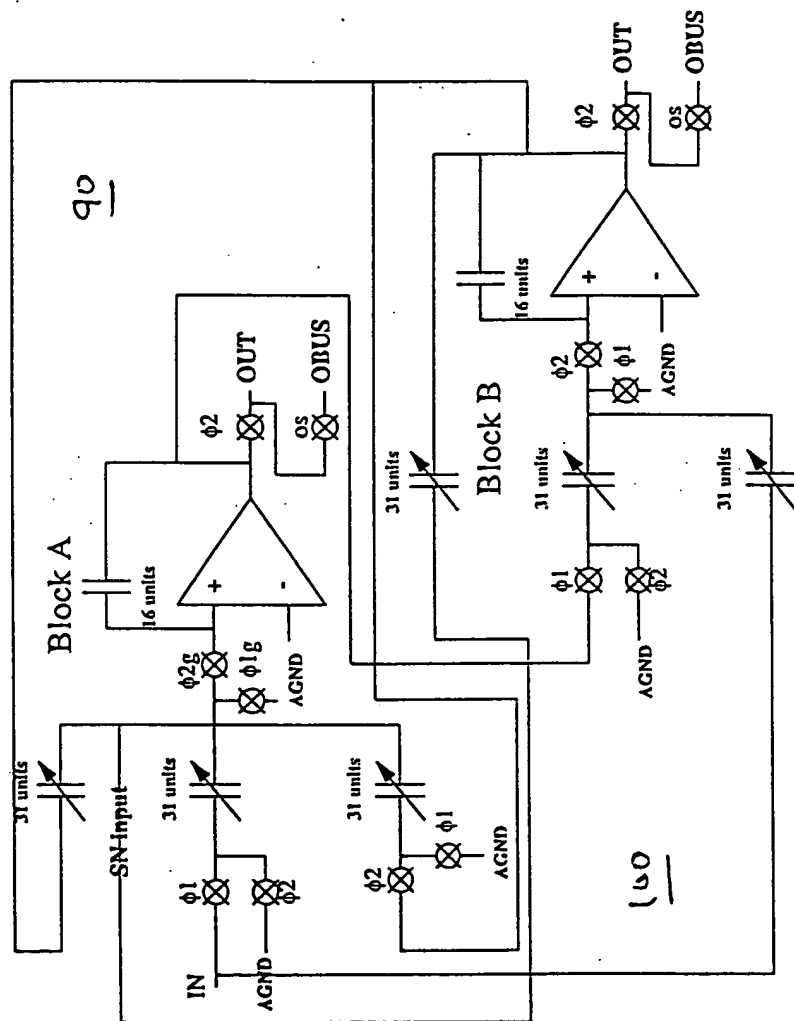


Figure 13



## Figure 14A

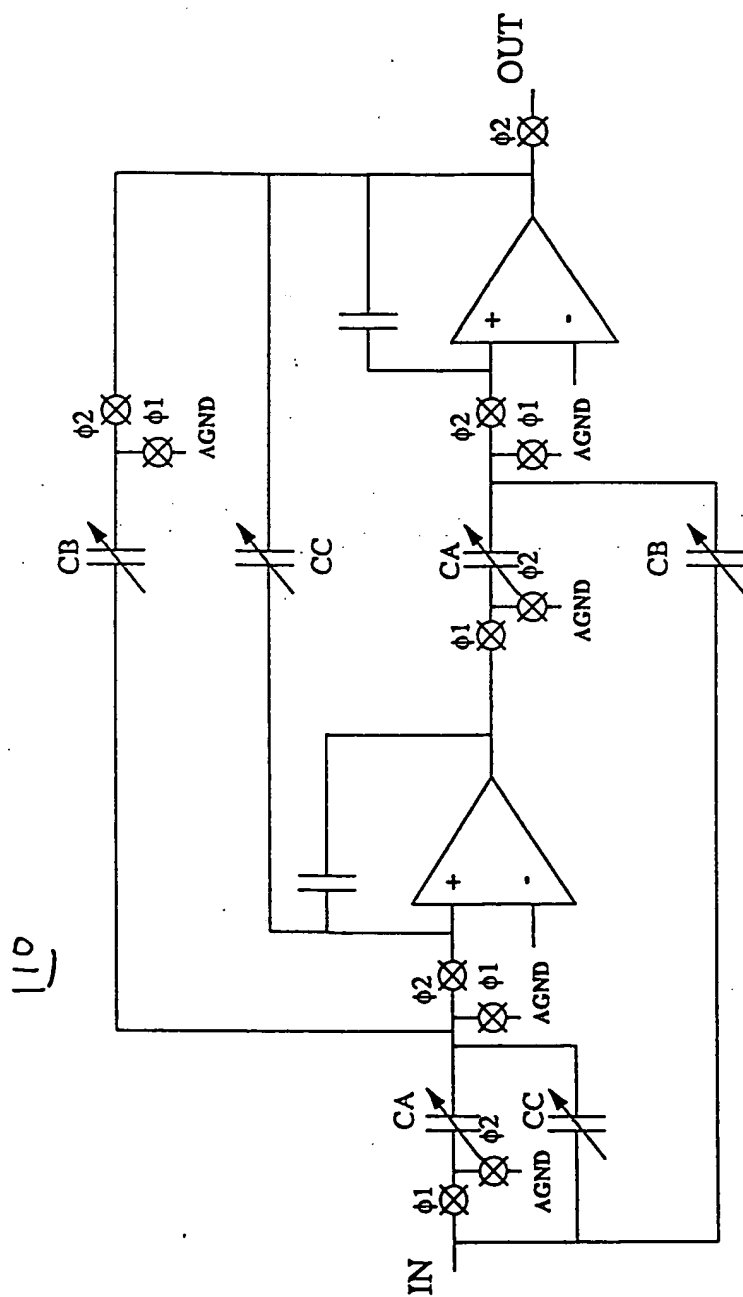


Figure 14B

150a

Reg Name	Addr	Reg Name	Addr	Reg Name	Addr	Reg Name	Addr
PRT0DR	000	reserved	040	ASA10CR0	080	reserved	0C0
PRT0IE	001	reserved	041	ASA10CR1	081	reserved	0C1
PRT0GS	002	reserved	042	ASA10CR2	082	reserved	0C2
reserved	003	reserved	043	ASA10CR3	083	reserved	0C3
PRT1DR	004	reserved	044	ASB11CR0	084	reserved	0C4
PRT1IE	005	reserved	045	ASB11CR1	085	reserved	0C5
PRT1GS	006	reserved	046	ASB11CR2	086	reserved	0C6
reserved	007	reserved	047	ASB11CR3	087	reserved	0C7
PRT2DR	008	reserved	048	ASA12CR0	088	reserved	0C8
PRT2IE	009	reserved	049	ASA12CR1	089	reserved	0C9
PRT2GS	00A	reserved	04A	ASA12CR2	08A	reserved	0CA
reserved	00B	reserved	04B	ASA12CR3	08B	reserved	0CB
PRT3DR	00C	reserved	04C	ASB13CR0	08C	reserved	0CC
PRT3IE	00D	reserved	04D	ASB13CR1	08D	reserved	0CD
PRT3GS	00E	reserved	04E	ASB13CR2	08E	reserved	0CE
reserved	00F	reserved	04F	ASB13CR3	08F	reserved	0CF
PRT4DR	010	reserved	050	ASB20CR0	090	reserved	0D0
PRT4IE	011	reserved	051	ASB20CR1	091	reserved	0D1
PRT4GS	012	reserved	052	ASB20CR2	092	reserved	0D2
reserved	013	reserved	053	ASB20CR3	093	reserved	0D3
PRT5DR	014	reserved	054	ASA21CR0	094	reserved	0D4
PRT5IE	015	reserved	055	ASA21CR1	095	reserved	0D5
PRT5GS	016	reserved	056	ASA21CR2	096	reserved	0D6
reserved	017	reserved	057	ASA21CR3	097	reserved	0D7
reserved	018	reserved	058	ASB22CR0	098	reserved	0D8
reserved	019	reserved	059	ASB22CR1	099	reserved	0D9
reserved	01A	reserved	05A	ASB22CR2	09A	reserved	0DA
reserved	01B	reserved	05B	ASB22CR3	09B	reserved	0DB
reserved	01C	reserved	05C	ASA23CR0	09C	reserved	0DC
reserved	01D	reserved	05D	ASA23CR1	09D	reserved	0DD
reserved	01E	reserved	05E	ASA23CR2	09E	reserved	0DE
reserved	01F	reserved	05F	ASA23CR3	09F	reserved	0DF
DBA00DR0	020	AMX IN	060	reserved	0A0	INT MSK0	0E0
DBA00DR1	021	reserved	061	reserved	0A1	INT MSK1	0E1
DBA00DR2	022	reserved	062	reserved	0A2	INT VC	0E2
DBA00CR0	023	ARF CR	063	reserved	0A3	RES WOT	0E3
DBA01DR0	024	CMP CR	064	reserved	0A4	DEC DH or	0E4
DBA01DR1	025	ASY CR	065	reserved	0A5	DEC DL	0E5
DBA01DR2	026	reserved	066	reserved	0A6	DEC CR	0E6
DBA01CR0	027	reserved	067	reserved	0A7	reserved	0E7
DCA02DR0	028	reserved	068	reserved	0A8	MUL X	0E8
DCA02DR1	029	reserved	069	reserved	0A9	MUL Y	0E9
DCA02DR2	02A	reserved	06A	reserved	0AA	MUL DH	0EA
DCA02CR0	02B	reserved	06B	reserved	0AB	MUL DL	0EB
DCA03DR0	02C	reserved	06C	reserved	0AC	ACC DR0 or	0EC
DCA03DR1	02D	reserved	06D	reserved	0AD	ACC DR1 or	0ED
DCA03DR2	02E	reserved	06E	reserved	0AE	ACC DR2 or	0EE
DCA03CR0	02F	reserved	06F	reserved	0AF	ACC DR3 or	0EF
DBA04DR0	030	reserved	070	reserved	0B0	reserved	0F0
DBA04DR1	031	ACA00CR0	071	reserved	0B1	reserved	0F1
DBA04DR2	032	ACA00CR1	072	reserved	0B2	reserved	0F2
DBA04CR0	033	ACA00CR2	073	reserved	0B3	reserved	0F3
DBA05DR0	034	reserved	074	reserved	0B4	reserved	0F4
DBA05DR1	035	ACA01CR0	075	reserved	0B5	reserved	0F5
DBA05DR2	036	ACA01CR1	076	reserved	0B6	reserved	0F6
DBA05CR0	037	ACA01CR2	077	reserved	0B7	reserved	0F7
DCA06DR0	038	reserved	078	reserved	0B8	reserved	0F8
DCA06DR1	039	ACA02CR0	079	reserved	0B9	reserved	0F9
DCA06DR2	03A	ACA02CR1	07A	reserved	0BA	reserved	0FA
DCA06CR0	03B	ACA02CR2	07B	reserved	0BB	reserved	0FB
DCA07DR0	03C	reserved	07C	reserved	0BC	reserved	0FC
DCA07DR1	03D	ACA03CR0	07D	reserved	0BD	reserved	0FD
DCA07DR2	03E	ACA03CR1	07E	reserved	0BE	reserved	0FE
DCA07CR0	03F	ACA03CR2	07F	reserved	0BF	CPU SCR	0FF

Figure 15A

150b

Reg Name	Addr	Reg Name	Addr	Reg Name	Addr	Reg Name	Addr
PRT0DM0	000	reserved	040	ASA10CR0	080	reserved	0C0
PRT0DM1	001	reserved	041	ASA10CR1	081	reserved	0C1
PRT0IC0	002	reserved	042	ASA10CR2	082	reserved	0C2
PRT0IC1	003	reserved	043	ASA10CR3	083	reserved	0C3
PRT1DM0	004	reserved	044	ASB11CR0	084	reserved	0C4
PRT1DM1	005	reserved	045	ASB11CR1	085	reserved	0C5
PRT1IC0	006	reserved	046	ASB11CR2	086	reserved	0C6
PRT1IC1	007	reserved	047	ASB11CR3	087	reserved	0C7
PRT2DM0	008	reserved	048	ASA12CR0	088	reserved	0C8
PRT2DM1	009	reserved	049	ASA12CR1	089	reserved	0C9
PRT2IC0	00A	reserved	04A	ASA12CR2	08A	reserved	0CA
PRT2IC1	00B	reserved	04B	ASA12CR3	08B	reserved	0CB
PRT3DM0	00C	reserved	04C	ASB13CR0	08C	reserved	0CC
PRT3DM1	00D	reserved	04D	ASB13CR1	08D	reserved	0CD
PRT3IC0	00E	reserved	04E	ASB13CR2	08E	reserved	0CE
PRT3IC1	00F	reserved	04F	ASB13CR3	08F	reserved	0CF
PRT4DM0	010	reserved	050	ASB20CR0	090	reserved	0D0
PRT4DM1	011	reserved	051	ASB20CR1	091	reserved	0D1
PRT4IC0	012	reserved	052	ASB20CR2	092	reserved	0D2
PRT4IC1	013	reserved	053	ASB20CR3	093	reserved	0D3
PRT5DM0	014	reserved	054	ASA21CR0	094	reserved	0D4
PRT5DM1	015	reserved	055	ASA21CR1	095	reserved	0D5
PRT5IC0	016	reserved	056	ASA21CR2	096	reserved	0D6
PRT5IC1	017	reserved	057	ASA21CR3	097	reserved	0D7
reserved	018	reserved	058	ASB22CR0	098	reserved	0D8
reserved	019	reserved	059	ASB22CR1	099	reserved	0D9
reserved	01A	reserved	05A	ASB22CR2	09A	reserved	0DA
reserved	01B	reserved	05B	ASB22CR3	09B	reserved	0DB
reserved	01C	reserved	05C	ASA23CR0	09C	reserved	0DC
reserved	01D	reserved	05D	ASA23CR1	09D	reserved	0DD
reserved	01E	reserved	05E	ASA23CR2	09E	reserved	0DE
reserved	01F	reserved	05F	ASA23CR3	09F	reserved	0DF
OBA00FN	020	CLK_CR0	060	reserved	0A0	OSC_CR0	0E0
OBA00IN	021	CLK_CR1	061	reserved	0A1	OSC_CR1	0E1
OBA00OU	022	ABF_CR	062	reserved	0A2	reserved	0E2
reserved	023	AMD_CR	063	reserved	0A3	VLT_CR	0E3
OBA01FN	024	reserved	064	reserved	0A4	reserved	0E4
OBA01IN	025	reserved	065	reserved	0A5	reserved	0E5
OBA01OU	026	reserved	066	reserved	0A6	reserved	0E6
reserved	027	reserved	067	reserved	0A7	reserved	0E7
OCA02FN	028	reserved	068	reserved	0A8	IMO_TR	0E8
OCA02IN	029	reserved	069	reserved	0A9	ILO_TR	0E9
OCA02OU	02A	reserved	06A	reserved	0AA	BDG_TR	0EA
reserved	02B	reserved	06B	reserved	0AB	ECO_TR	0EB
OCA03FN	02C	reserved	06C	reserved	0AC	reserved	0EC
OCA03IN	02D	reserved	06D	reserved	0AD	reserved	0ED
OCA03OU	02E	reserved	06E	reserved	0AE	reserved	0EE
reserved	02F	reserved	06F	reserved	0AF	reserved	0EF
OBA04FN	030	reserved	070	reserved	0B0	reserved	0F0
OBA04IN	031	ACA00CR0	071	reserved	0B1	reserved	0F1
OBA04OU	032	ACA00CR1	072	reserved	0B2	reserved	0F2
reserved	033	ACA00CR2	073	reserved	0B3	reserved	0F3
OBA05FN	034	reserved	074	reserved	0B4	reserved	0F4
OBA05IN	035	ACA01CR0	075	reserved	0B5	reserved	0F5
OBA05OU	036	ACA01CR1	076	reserved	0B6	reserved	0F6
reserved	037	ACA01CR2	077	reserved	0B7	reserved	0F7
OCA06FN	038	reserved	078	reserved	0B8	reserved	0F8
OCA06IN	039	ACA02CR0	079	reserved	0B9	reserved	0F9
OCA06OU	03A	ACA02CR1	07A	reserved	0BA	reserved	0FA
reserved	03B	ACA02CR2	07B	reserved	0BB	reserved	0FB
OCA07FN	03C	reserved	07C	reserved	0BC	reserved	0FC
OCA07IN	03D	ACA03CR0	07D	reserved	0BD	reserved	0FD
OCA07OU	03E	ACA03CR1	07E	reserved	0BE	reserved	0FE
reserved	03F	ACA03CR2	07F	reserved	0BF	CPU_SCR	0FF

Figure 15B

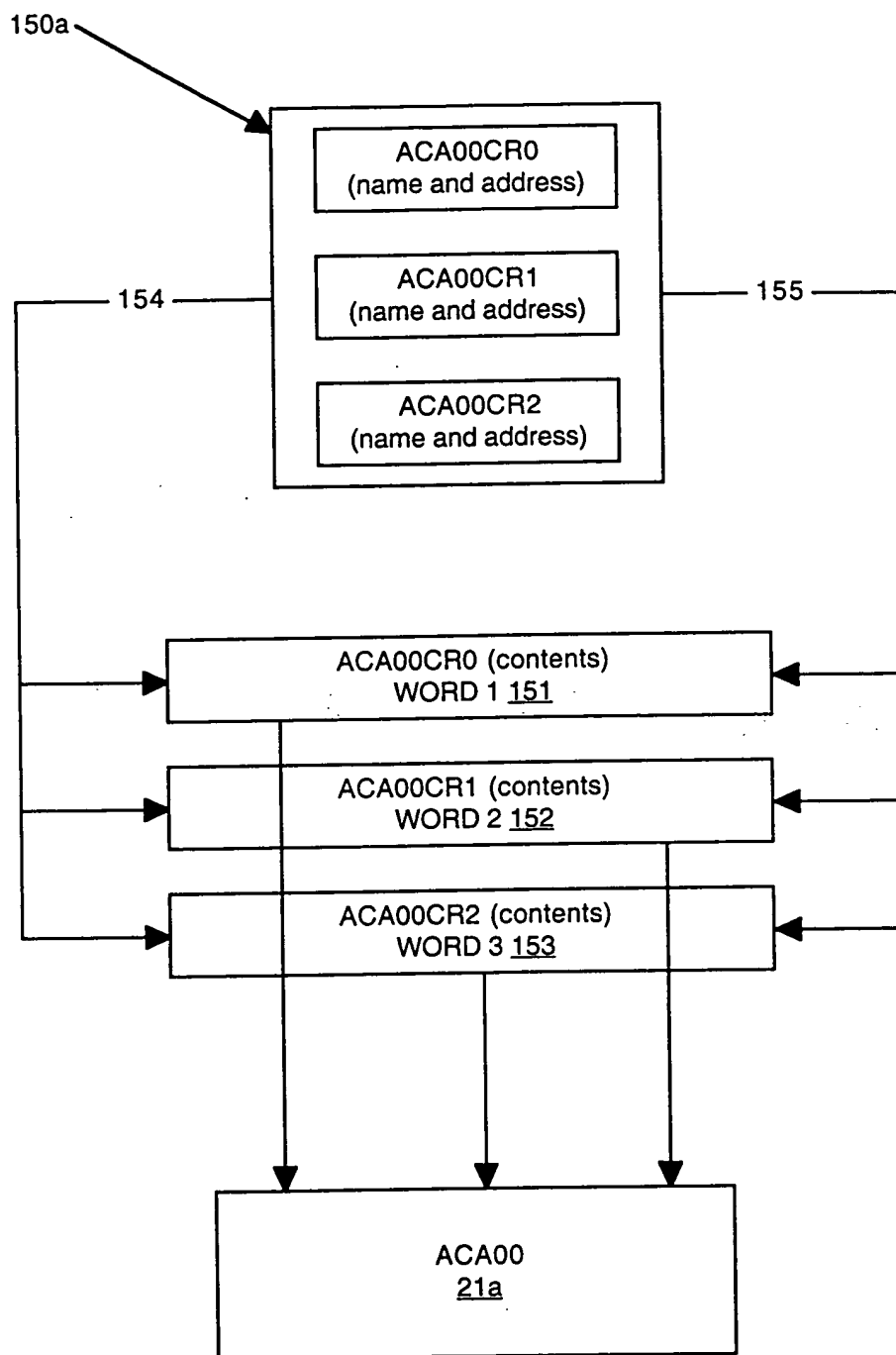


Figure 16

151 → • Word 1 (LSB) F0 F1 F3 G N/C N/C N/C N/C (MSB)  
 152 → • Word 2 (LSB) P0 P1 P2 N0 N1 N2 CEN OS (MSB)  
 153 → • Word 3 (LSB) S0 S1 N/C N/C R0 R1 R2 R3 (MSB)

Figure 17

- Word 0 (LSB) A0 A1 A2 A3 A4 S PS OSZ (MSB)
- Word 1 (LSB) B0 B1 B2 B3 B4 I11 I12 IS3 (MSB)
- Word 2 (LSB) C0 C1 C2 C3 C4 AZ CS OS (MSB)
- Word 3 (LSB) S0 S1 IS21 IS22 DO1 DO2 R1 R2 (MSB)

Figure 18A

- Word 0 (LSB) A0 A1 A2 A3 A4 S PS OSZ (MSB)
- Word 1 (LSB) B0 B1 B2 B3 B4 I11 I12 I13 (MSB)
- Word 2 (LSB) C0 C1 C2 C3 C4 AZ CS OS (MSB)
- Word 3 (LSB) S0 S1 MB N/C DO1 DO2 R1 R2 (MSB)

Figure 18B

19°

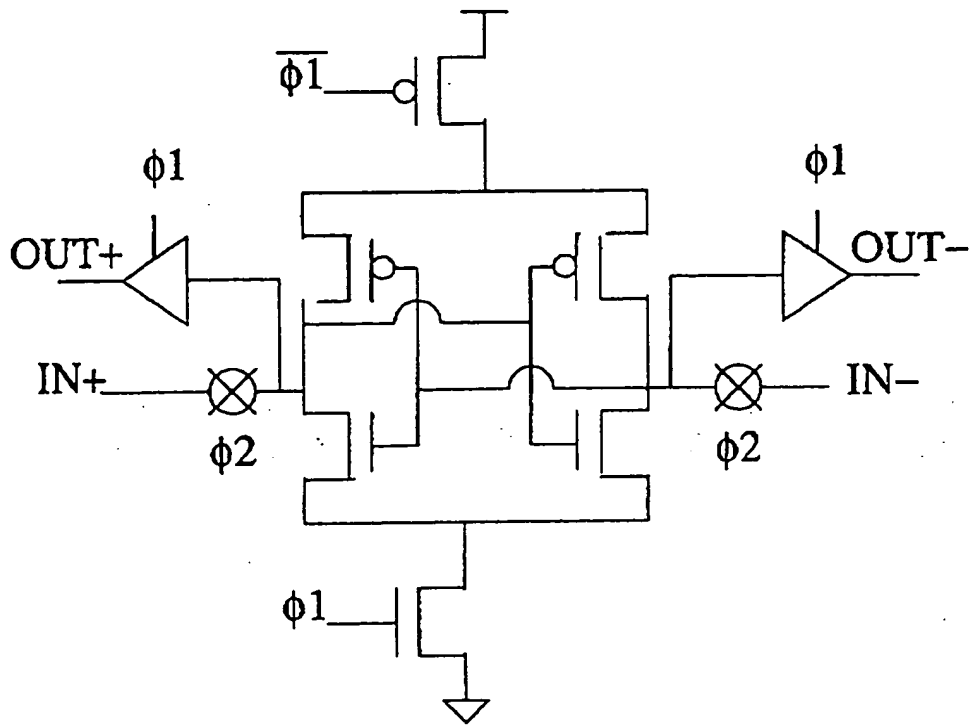


Figure 19



200

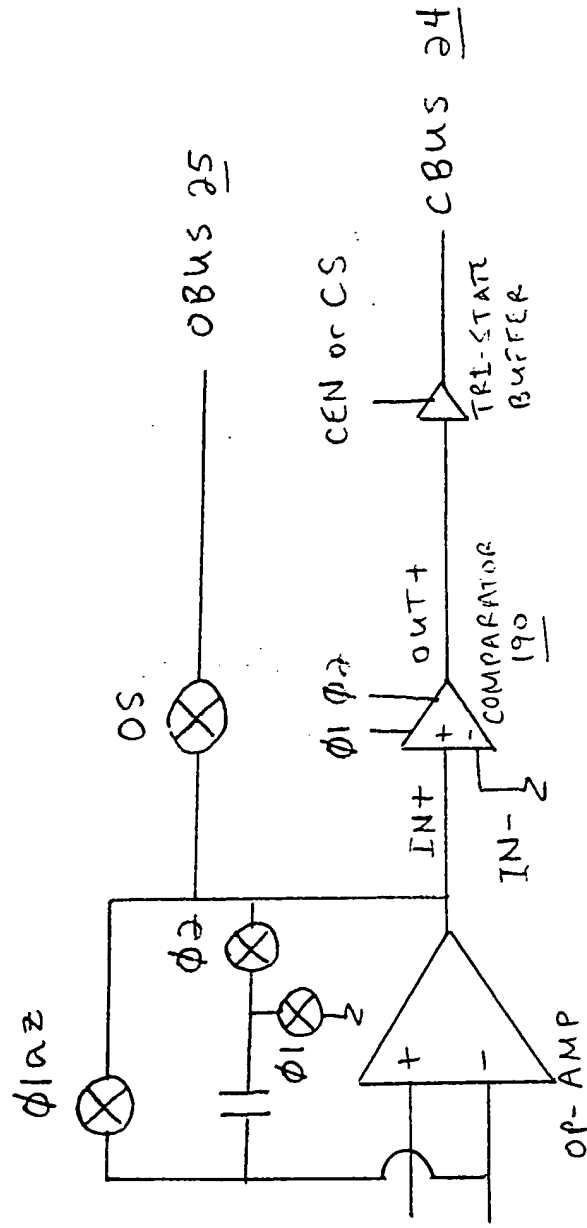


Figure 20

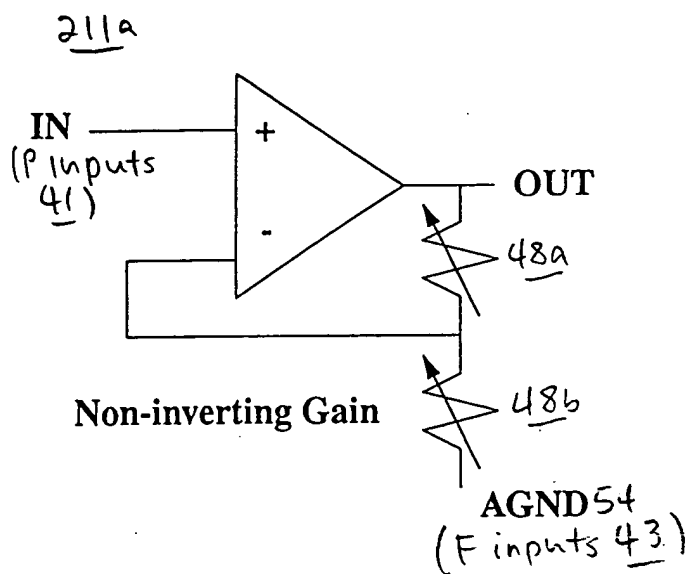


Figure 21A

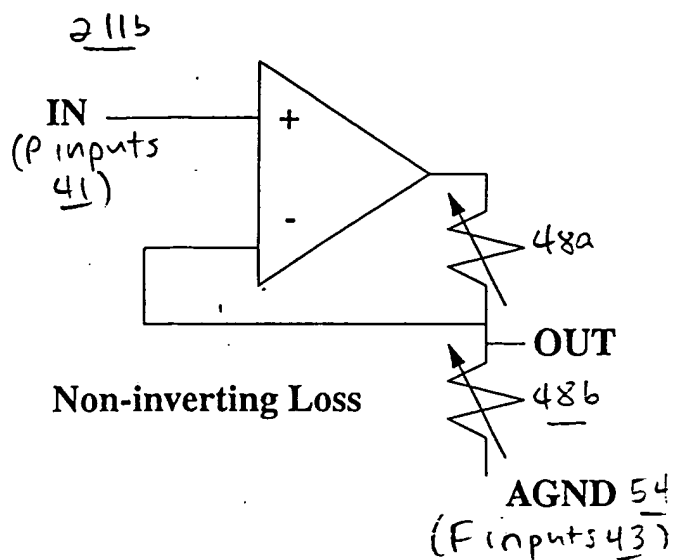


Figure 21B

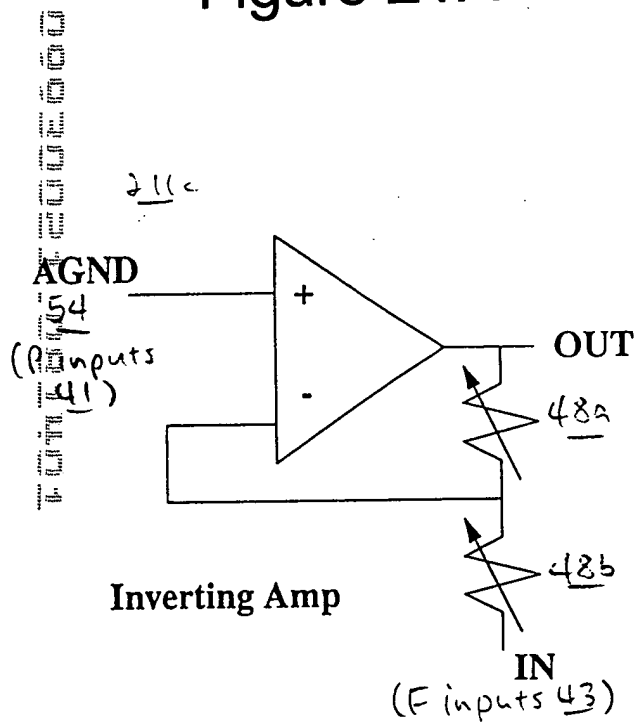


Figure 21C

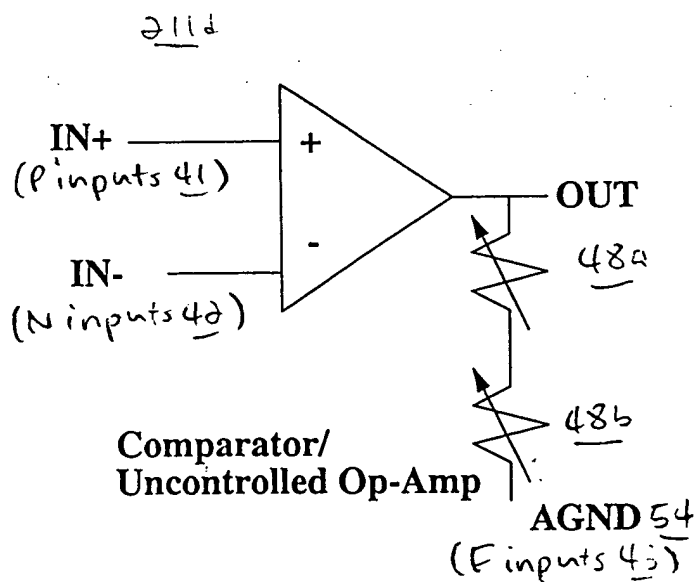


Figure 21D

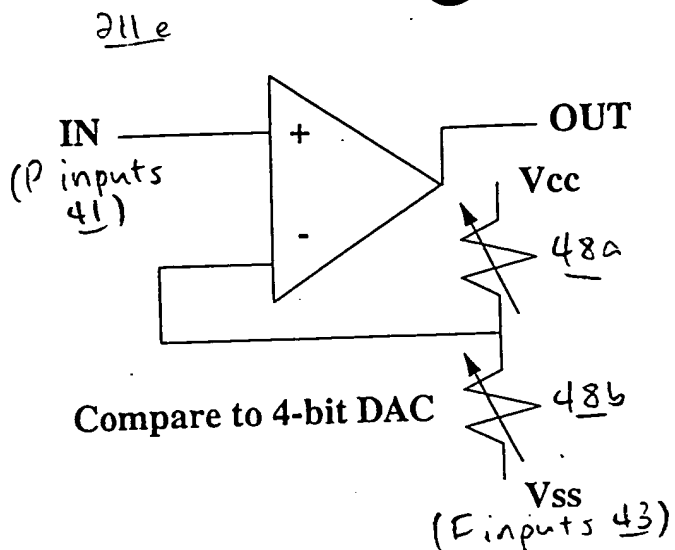


Figure 21E

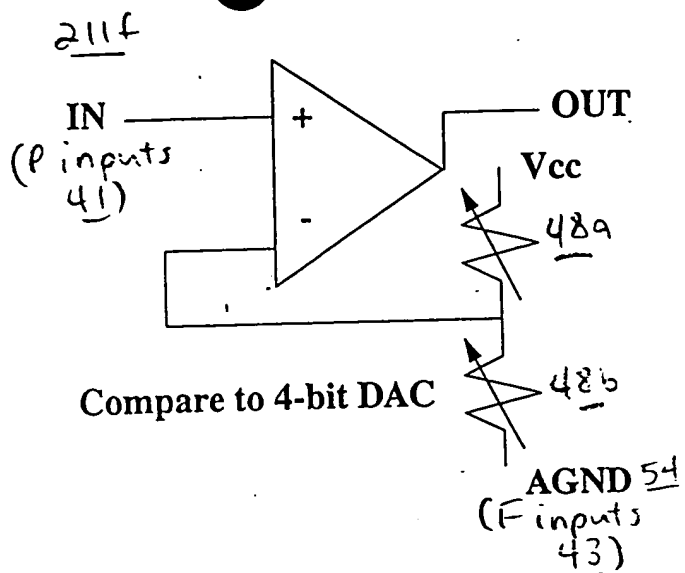


Figure 21F

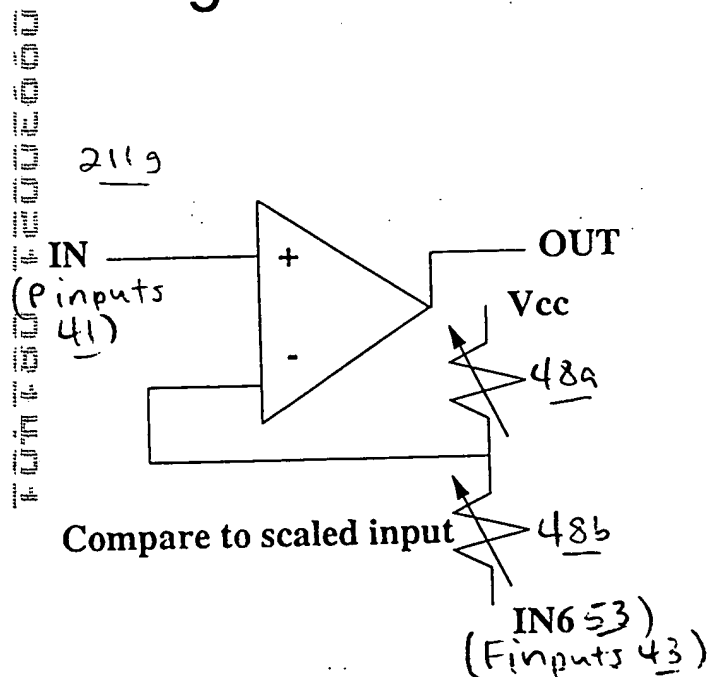


Figure 21G

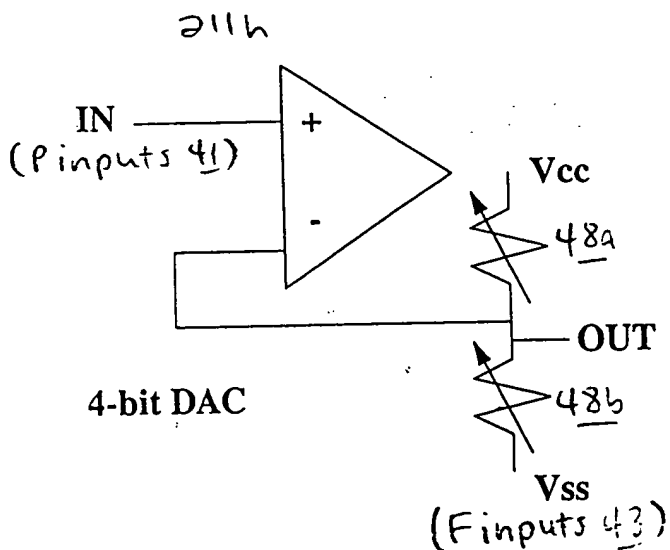


Figure 21H





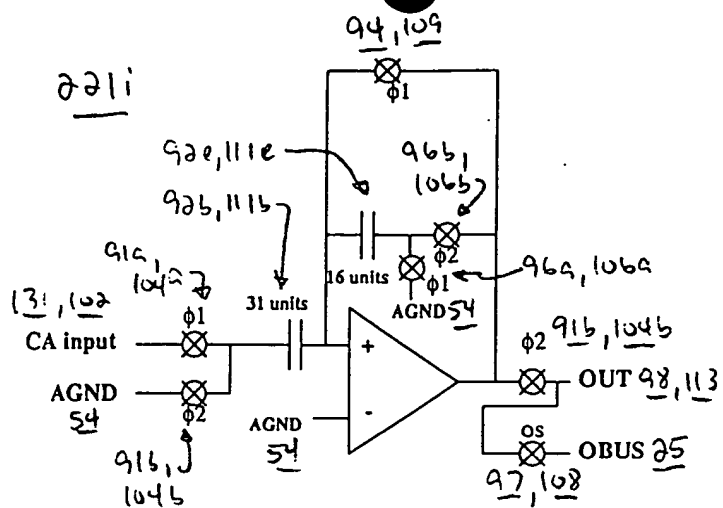


Figure 22I

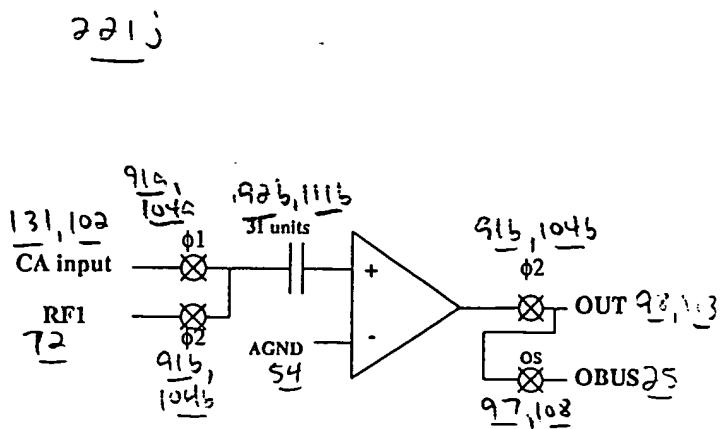


Figure 22J

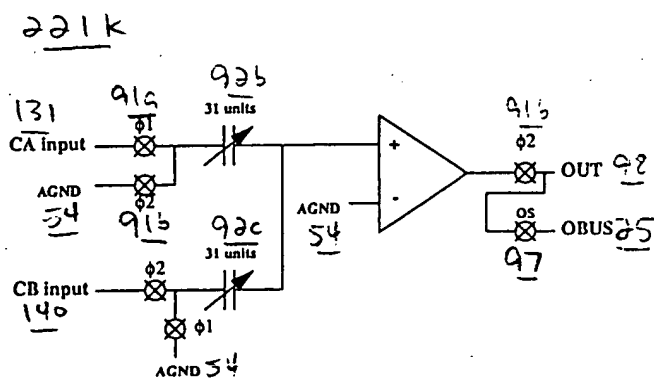


Figure 22K

230

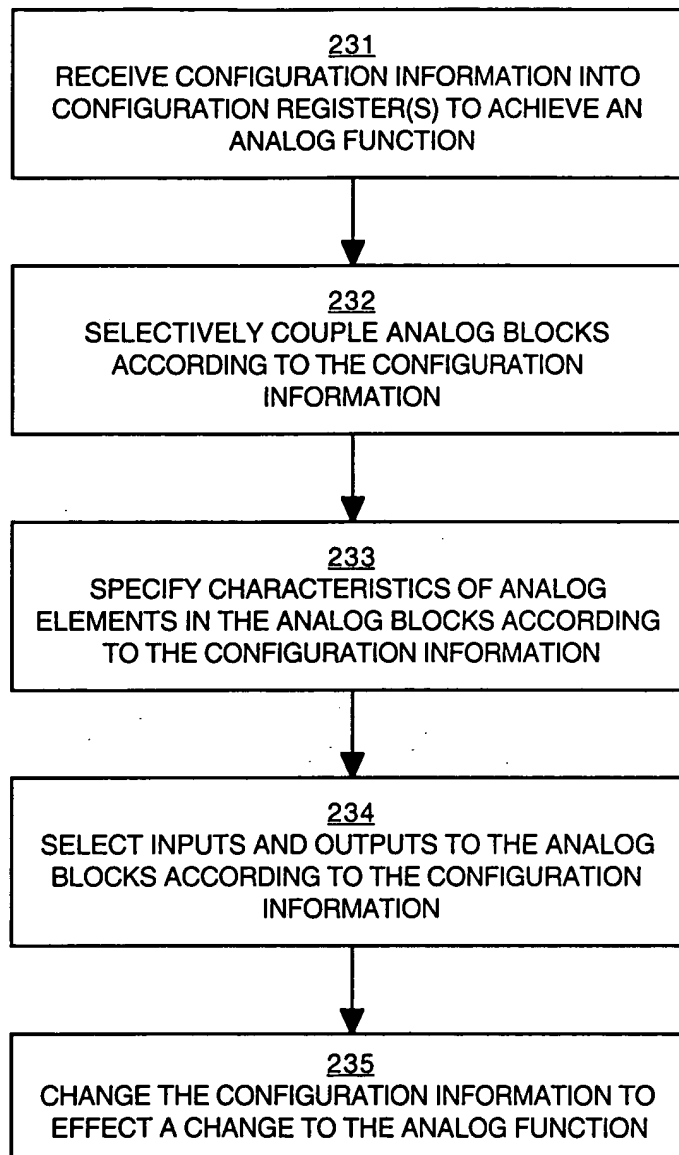


Figure 23